



Ebola: Teaching Points for Nurse Educators

Heightened media attention on emerging disease outbreaks such as Ebola may raise concerns among students. During outbreaks such as Ebola, nursing faculty are in an ideal position to discuss emerging diseases, infection prevention and reinforce the role of the nurse in controlling and preventing these diseases.

The recent Ebola outbreaks present an opportunity to reinforce elements throughout the curriculum. This teaching guide is intended to identify relevant issues and help guide nursing faculty when discussing emerging diseases with students at different levels of the nursing curriculum. Although the Ebola outbreak is used as an example, this guide can also be used to address issues associated with emerging infectious diseases in general.

FUNDAMENTAL TOPICS

What are isolation precautions and why are they used?

- Isolation precautions are a set of interventions used to prevent the spread of infectious disease. These include **standard precautions** (applied to all patients) and **transmission-based precautions** (recommended based on the way that an infection is transmitted).
 - Transmission-based precautions include:
 - Contact
 - Droplet
 - Airborne
- Enhanced isolation is recommended for specific infections. The recommendation to cover all exposed skin and supervise donning and doffing of PPE is an example of enhancements to isolation.

What is Personal Protective Equipment (PPE)?

- PPE includes, gowns, gloves, masks, boots.
- Along with PPE, hand hygiene and environmental controls are important parts of isolation precautions.

Why is PPE worn?

- PPE is used to:
 1. Protect healthcare workers.
 2. Protect patients from cross-transmission.
 3. Prevent environmental contamination.
- Use of PPE is required according to the nurse practice acts.

What is the nurse's responsibility in caring for a patient with Ebola?

- Several provisions from the Code of Ethics for Nurses With Interpretive Statements relate to the care of patients with highly infectious diseases (emphasis added):

- **Provision 1.** The nurse, in all professional relationships, practices with compassion and respect for the inherent dignity, worth, and uniqueness of every individual, unrestricted by considerations of social or economic status, personal attributes, or the nature of health problems.
- **Provision 3.** The nurse promotes, advocates for, and strives to protect the health, safety, and rights of the patient.
- **Provision 5.** The nurse owes the same duties to self as to others, including the responsibility to preserve integrity and safety, to maintain competence, and to continue personal and professional growth.

EVIDENCE-BASED PRACTICE TOPICS

What evidence is available about the etiology and prevention of Ebola?

- Individual case reports of Ebola transmission have been reported outside of the main outbreak countries including Spain and the United States.
- Case series of Ebola are reported.
- Expert opinion is often used in emerging outbreaks based on knowledge about infection transmission for other diseases and results of field experience.

What are the issues in performing randomized controlled trials for the study of Ebola?

- As new infections emerge, an immediate response is required and planning, designing, and implementing RCTs are impractical.
- Ethical concerns about assignment of individuals to placebo or routine care.

Where can current evidence-based practice guidelines be found?

- Current practice guidelines for different settings are available from:
 - International bodies (WHO)
 - National agencies (CDC)
 - Professional associations (APIC, SHEA, IDSA, ANA, NLN)
 - Hospitals and other healthcare facilities develop guidelines, policies and procedures for care of patients with highly contagious conditions.

LEADERSHIP AND INTERDISCIPLINARY PRACTICE

What are the specialized roles involved in identifying and controlling Ebola?

- Nurses play the key role in direct care of patients with Ebola or other infectious conditions including assessing the patient, monitoring response to treatment and assisting with activities of daily living.
- Physicians direct diagnosis and treatment of Ebola cases -- infectious disease physicians and other specialists direct the medical treatment of patients.
- Public health officials are involved in case identification, contact tracing, and epidemiologic investigation.
- Emergency nurses and intensive care nurses provide direct care of affected patients.
- Infection preventionists design, implement and monitor strategies to prevent the transmission of infection and educate patients and staff.

- Hospital epidemiologists monitor trends and recommend treatment strategies within healthcare organizations.
- Laboratory professionals design strategies for handling diagnostics tests and performing testing in coordination with reference labs.
- Communication specialists help disseminate current information about Ebola and control measures.

What is the role of leaders and managers in addressing Ebola?

- Assure the presence of a coordinated plan to address infection transmission.
- Provide technically correct best practice recommendations to staff and patients appropriate for the local setting.
- Coordinate media and public relations efforts.
- Direct the allocation of resources for needed personnel, supplies, equipment, and appropriate facilities.

COMMUNITY HEALTH TOPICS

What is an “emerging disease?”

- Emerging diseases are either new or recently identified in humans.
- Examples of emerging diseases are those that appear in a new or different geographic area, zoonotic diseases (spread to humans from animals), vector-borne diseases (e.g., those transmitted by mosquitoes, fleas), or known infectious agents that become more virulent or resistant to treatment.

What are “reportable diseases?”

- Reportable diseases are those that are believed to be of great public health importance.
- Examples include anthrax, diphtheria, hepatitis B, malaria, rabies, sexually transmitted diseases (gonorrhea, syphilis).
- State law requires that these conditions be reported. Often, they are reported by the laboratory once a positive test is identified.
- Reportable conditions and reporting procedures vary by state.

What is a “case definition” and how is it applied to Ebola?

- A case definition is a set of uniform criteria that are used to define a disease for public health purposes.
- Case definitions are often linked to descriptions such as “confirmed,” “probable,” or “suspected.”
- Case definitions often have multiple requirements which must be met.
- The case definition can be used for treatment, but is primarily intended as a means of monitoring the number of cases in an outbreak.
- The case definition for Ebola includes:
 1. Clinical criteria
 - Temperature > 101.5 and
 - Severe headache, muscle pain, vomiting, diarrhea, abdominal pain or unexplained hemorrhage.
 2. Risk factor – 21 days prior to symptoms:
 - Contact with blood or body fluids from a known or suspected Ebola case;
 - Residence in or travel to an area with Ebola transmission;
 - Handling of certain animals from Ebola affected regions.

CLINICAL TOPICS

Where can I find more information about Ebola?

- Key resources begin with the nurse manager, local infection experts.
- National and international guidelines are given below.

What are the key nursing needs of patients with Ebola?

- Ebola is an RNA virus that is transmitted through direct contact or droplet exposure. Thus, isolation precautions are targeted at these routes of transmission.
- Current care is supportive including aggressive hydration, hemodynamic support and symptom management.
- A variety of immune therapies and antiviral drugs are currently under investigation.

What is the role of a nursing student in caring for a patient a highly contagious disease?

- Nursing students and trainees are responsible for their own safety and patient safety.
- Caring for patients with Ebola requires specialized training in proper precautions and expert knowledge of isolation precautions and patient handling.
- Nursing students should not be asked to provide care to patients with Ebola without this advanced training.

Compare the number of deaths and case fatality rate from Ebola to those of influenza and other infectious diseases. How are these calculated?

- The number of deaths is a count of deaths directly attributable to the disease in a specific region.
- The incidence is calculated as the number of cases/population.
- Case fatality rate is the number of deaths/total cases.
- During an ongoing outbreak, the proportion of fatal cases is used to determine the death rate for that outbreak.

What are the main signs and symptoms of Ebola? Contrast these to other viral illnesses.

- A good clinical history is key to identifying potential cases of Ebola including:
 - Sudden onset of a fever within 21 days of a known exposure;
 - Fatigue, vomiting, diarrhea and anorexia;
 - Leukopenia and thrombocytopenia.

ADDITIONAL RESOURCES

Practice Resources: Ebola Virus Disease

Association for Professionals in Infection Control and Epidemiology, Washington, DC
<http://www.apic.org/Professional-Practice/Practice-Resources/Ebola-virus-disease>
Provides guidance on Ebola prevention and outbreak control with links to national and international guidelines.

Ebola (Ebola Virus Disease)

Centers for Disease Control and Prevention, Atlanta, GA
<http://www.cdc.gov/vhf/ebola/>
Information on current outbreak statistics and U.S. prevention recommendations.

Ebola Information

American Nurses Association, Washington, DC
<http://www.nursingworld.org/Ebola-Information>
Provides ANA announcements and guidance on nursing-related topics on Ebola.

Global Alert and Response: Ebola

World Health Organization, Geneva, Switzerland
<http://www.who.int/csr/disease/ebola/en/>
Includes infection international infection prevention and control guidance and outbreak statistics.

Ebola Resources for Nurse Educators

American Association of Colleges of Nursing, Washington, DC
<http://www.aacn.nche.edu/news/articles/2014/ebola-resources>
Contains information for nurse educators and position statements.

Dealing with Ebola and Other Dire Infectious Diseases

National League for Nursing, Washington, DC
<http://www.nln.org/facultyprograms/ebolaresources.htm>
NLN recommendations and resources for the nursing education community.

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